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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/965,431      | 09/27/2001  | William Zahavi       | EMC-01-160          | 3626             |

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EMC CORPORATION  
OFFICE OF THE GENERAL COUNSEL  
176 SOUTH STREET  
HOPKINTON, MA 01748

EXAMINER

BRAGDON, REGINALD GLENWOOD

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2188

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/965,431

Applicant(s)

ZAHAVI, WILLIAM

Examiner

Reginald G. Bragdon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-18 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 19-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-15-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Information Disclosure Statement*

1. The Information Disclosure Statement(s) received 15 March 2004 has been considered.

Please see the attached PTO-1449(s).

### *Drawings*

2. The drawings are objected to because:

There is no element "141" in figures 1 or 2 (see page 10, line 17).

There is no element "510" in figure 3 (see page 12, line 14). Instead there is an element "580".

In figure 3, should "RAID-S" be --RAID-5--.

There is no element "538" in figure 13 (see page 16, line 5).

"RAID-1" is not shown as being selected in figure 15 (see page 17, line 16).

In figure 16, "Performing Zone" should be --Performance Zone--.

In figure 20, the wrong "tab" is highlighted, i.e. "Disk Counting" is highlighted instead of "Connection".

In figure 11, there is no "arrow" from "370" to "380" (see page 22, lines 4-6).

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

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should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

4. The disclosure is objected to because of the following informalities:

On page 2, line 22, “particular” should be --particularly--.

On page 3, line 13, --a-- should be added before “great”.

On page 13, line 12, and figure 3, should “RAID-S” be --RAID-5--?

On page 16, line 19, “Fig. 4” should be --Fig. 5--.

On page 16, line 22, should “RAID-S” be --RAID-5--.

Appropriate correction is required.

### *Claim Objections*

5. Claims 2, 9, 14, and 21 are objected to because of the following informalities:

In claim 2, line 2, --of-- should be added after “amount”.

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In claim 9, line 2, "information about storage space available on each disk" should be -- information related to an amount of storage space associated with a quantity of disk drives--.

In claim 14, line 2, --of-- should be added after "amount".

In claim 21, line 2, "information about storage space available on each disk" should be -- information related to an amount of storage space associated with a quantity of disk drives--.

Appropriate correction is required.

### ***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-6, 10-18, and 22-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of copending Application No. 10/180,716 in view of Frazier.

| 09/965,431<br>(Instant Application)  | 10/180,716<br>(Co-pending Application)   |
|--|--|
| 1. A method for configuring a data storage system, the method comprising the steps of: | 1. A method for configuring a data storage environment including one or more data storage systems, the method comprising the |

|   |  |
|---|--|
|   | steps of:  |
| presenting a user interface;  | presenting a user interface;   |
| receiving information related to workload characteristics and performance characteristics through the user interface;                       | receiving information related to workload characteristics and performance characteristics through the user interface;  |
| presenting storage configuration information for the data storage system that is based on these characteristics through the user interface. |  |
|   | analyzing the information to correlate data volumes of the one or more data volumes; and using the correlation information for configuring or modeling the data storage environment. |

Claim 1 of the '716 application (which corresponds to claim 1 of the instant application) does not set forth "presenting storage configuration information for the data storage system that is based on these characteristics through the user interface". Frazier teaches displaying ("presenting") configuration information for a volume set based on at least the caching options, ION characteristics, and RAID level volume sets are created and displayed for the user. See column 43, lines 4-8 and 62-65. It would have been obvious to one of ordinary skill in the art to have modified claim 1 of the '716 patent to include displaying storage configuration information for the data storage system based on the workload and performance characteristics through the user interface, as suggested by Frazier, because displaying the configuration information would provide for efficient administration and selection of configuration options by an administrator based on the characteristics.

Furthermore, claim 1 of U.S. Patent application 10/180,716 contains every element of claim 1 of the instant application (except the "presenting..." step discussed above) and as such anticipates claim 1 of the instant application.

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“A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). “ **ELI LILLY AND COMPANY v BARR LABORATORIES, INC.**, United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Claim 13 of the present application corresponds to claim 9 of the ‘716 application and is rejected for the reasons set forth for claim 1, above.

Claim 25 of the present application corresponds to claim 16 of the ‘716 application and is rejected for the reasons set forth for claim 1, above.

As per claims 2 and 14, Frazier teaches a box 1316 (figure 14) which displays the VSI and the related sizes as part of the configuration information. See column 44, lines 16-19.

Claim 3 of the present application corresponds to claim 2 of the ‘716 application.

Claim 4 of the present application corresponds to claim 3 of the ‘716 application.

Claim 5 of the present application corresponds to claim 4 of the ‘716 application.

Claim 6 of the present application corresponds to claim 5 of the ‘716 application.

Claim 15 of the present application corresponds to claim 10 of the ‘716 application.

Claim 16 of the present application corresponds to claim 11 of the ‘716 application.

Claim 17 of the present application corresponds to claim 12 of the ‘716 application.

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Claim 18 of the present application corresponds to claim 13 of the '716 application.

As per claims 10 and 22, Frazier teach a user settable read ahead caching value (figure 13, element 1214, and figure 15), which represents a "user provided performance comfort zone" and is presented as part of the storage configuration.

As per claims 11-12 and 23-24, Frazier teaches selecting a VSI RAID level (1108 in figure 12), where RAID is a data protection scheme, which is presented as part of the storage configuration. See column 42, line 67.

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 101***

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claim 25 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 25 is not limited to tangible embodiments. In view of applicants' disclosure, specification page 8, line 9-19, the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., floppy diskettes, CD-ROMs, hard drives, random access or read only memory, or other machine-readable storage media) and intangible embodiments (e.g., transmission medium, such as electrical wiring or cabling, fiber optics, or via any other form of transmission). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

To overcome this rejection, Applicant should consider changing “computer readable medium” in line 2 of claim 25 to either “computer readable tangible medium” (see page 8, line 10 of the specification) or “computer readable storage medium” (see page 8, line 11).

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-2, 4, 10-14, 16, and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Frazier (6,078,990).

As per claims 1, 13, and 25, Frazier teaches a RAID configuration interface (“presenting a user interface”). See figures 12-15. “Location information” box 1222 includes radio buttons 1224 for ION characteristics, including the percent utilized (“receiving information related to workload characteristics”). See column 43, lines 50-55, and column 44, lines 6-14 and 40-43. Caching options can be selected by the administrator (“receiving information related to...performance characteristics”). See column 43, lines 33-46, and column 44, lines 40-43. Based on at least the caching options, ION characteristics, and RAID level volume sets are created and displayed for the user (“presenting storage configuration information for the data storage system that is based on these characteristics through the user interface”). See column 43, lines 4-8 and 62-65.

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As per claims 2 and 14, Frazier teaches a box 1316 (figure 14) which displays the VSI and the related sizes. See column 44, lines 16-19.

As per claims 4 and 16, Frazier teaches establishing read and write caching options for data within the VSI. See figure 13 and 15.

As per claims 10 and 22, Frazier teach a user settable read ahead caching value (figure 13, element 1214, and figure 15), which represents a “user provided performance comfort zone”.

As per claims 11-12 and 23-24, Frazier teaches selecting a VSI RAID level (1108 in figure 12), where RAID is a data protection scheme. See column 42, line 67.

12. Claims 1-3, 11-15, and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Voight et al. (5,623,598).

As per claims 1, 13, and 25, Voight et al. teaches a user interface 100 (“presenting a user interface”; figures 5-6) which indicates the I/O access activity per second (“presenting information related to workload characteristics”) and the RAID level (“receiving information related to...performance characteristics”). See column 6, lines 15-20. Based on the collective performance history data (see figure 3, step 58), performance planning suggestions, including information about drive, cache, and DRAM configuration (“system configuration information”) are set forth through the interface (figure 6 and figure 3, steps 68 and 70).

As per claims 2 and 14, Voight et al. teaches presenting suggestions about storage space associated with the RAID space. See figure 6, the “working set metric” line (3<sup>rd</sup> line under “Indications”).

As per claims 3 and 15, Voight et al. teaches that the performance history data includes I/O access activity per second (“IO operations per unit time”). See column 6 lines 18-19.

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As per claims 11-12 and 23-24, Voight et al. teaches that the performance history data includes RAID level information, where RAID is a data protection scheme. See figure 5.

***Allowable Subject Matter***

13. Claims 7-9 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

14. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

All "OFFICIAL" patent application related correspondence transmitted by FAX must be directed to the central FAX number at **(703) 872-9306**:

"INFORMAL" or "DRAFT" FAX communications may be sent to the Examiner at **(571) 273-4204**, only after approval by the Examiner.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Fourth Floor (receptionist).

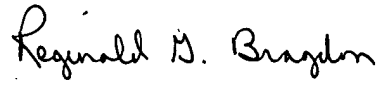
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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reginald G. Bragdon whose telephone number is (571) 272-4204. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and every other Friday from 7:00 AM to 3:30 PM.

The examiner's supervisor, Mano Padmanabhan, can be reached at (571) 272-4210.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

RGB  
June 9, 2005

  
Reginald G. Bragdon  
Primary Patent Examiner  
Art Unit 2188